SANTA CRUZ BIOTECHNOLOGY, INC.

N-SMase2 (H-195): sc-67305

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

N-SMase2 (neutral sphingomyelinase 2), also known as NSMASE2 or SMPD3 (sphingomyelin phosphodiesterase 3), is a ubiquitously expressed 655 amino acid member of the magnesium-dependent phosphohydrolase protein family. Localized to the membrane of the Golgi apparatus, N-SMase2 functions to catalyze the hydrolysis of sphingomyelin to form ceramide and phosphocholine—two proteins that mediate cell growth arrest and apoptosis. N-SMase2 is enzymatically activated by unsaturated fatty acids and phosphatidylserine and, through regulation of ceramide synthesis, is involved in growth suppression and postnatal development. Expression of N-SMase2 is upregulated during the G_0/G_1 phases of the cell cycle and optimal N-SMase2 activity occurs at a slightly basic pH of 7.5. N-SMase2 deficiency is the cause of chondrodysplasia, a genetic disorder characterized by impaired bone growth that leads to short stature, bowlegs and underdeveloped joints.

CHROMOSOMAL LOCATION

Genetic locus: SMPD3 (human) mapping to 16q22.1; Smpd3 (mouse) mapping to 8 D3.

SOURCE

N-SMase2 (H-195) is a rabbit polyclonal antibody raised against amino acids 461-655 mapping at the C-terminus of N-SMase2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

N-SMase2 (H-195) is recommended for detection of sphingomyelin phosphodiesterase 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

N-SMase2 (H-195) is also recommended for detection of sphingomyelin phosphodiesterase 3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for N-SMase2 siRNA (h): sc-62655, N-SMase2 siRNA (m): sc-62656, N-SMase2 shRNA Plasmid (h): sc-62655-SH, N-SMase2 shRNA Plasmid (m): sc-62656-SH, N-SMase2 shRNA (h) Lentiviral Particles: sc-62655-V and N-SMase2 shRNA (m) Lentiviral Particles: sc-62656-V.

Molecular Weight of N-SMase2: 70 kDa.

Positive Controls: N-SMase2 (m): 293T Lysate: sc-121910.

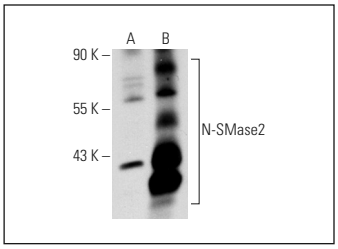
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

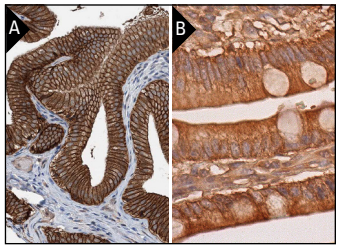
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



N-SMase2 (H-195): sc-67305. Western blot analysis of N-SMase2 expression in non-transfected: sc-117752 (**A**) and mouse N-SMase2 transfected: sc-121910 (**B**) 293T whole cell lysates.



N-SMase2 (H-195): sc-67305. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane and cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing membrane and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ito, H., et al. 2009. Transcriptional regulation of neutral sphingomyelinase 2 gene expression of a human breast cancer cell line, MCF-7, induced by the anti-cancer drug, daunorubicin. Biochim. Biophys. Acta 1789: 681-690.
2. Kosaka, N., et al. 2010. Secretory mechanisms and intercellular transfer of microRNAs in living cells. J. Biol. Chem. 285: 17442-17452.
3. Clarke, C.J., et al. 2011. Neutral sphingomyelinase-2 mediates growth arrest by retinoic acid through modulation of ribosomal S6 kinase. J. Biol. Chem. 286: 21565-21576.
4. Qin, J., et al. 2012. Neutral sphingomyelinase 2 deficiency increases hyaluronan synthesis by up-regulation of Hyaluronan synthase 2 through decreased ceramide production and activation of Akt. J. Biol. Chem. 287: 13620-13632.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS Satisfaction Guaranteed

Try **N-SMase2 (G-6): sc-166637**, our highly recommended monoclonal alternative to N-SMase2 (H-195).